WHAT IS CLAIMED IS:

1. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the nucleic acid encoding a polypeptide comprising greater than 70% amino acid identity to an amino acid sequence of SEQ ID NO:8 or SEQ ID NO:10, or SEQ ID NO:12.

2. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide having at least 50 contiguous amino acids of an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

3. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

4. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that has G-protein coupled receptor activity.

5. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

6. The isolated nucleic acid of claim 1,wherein the nucleic acid comprises a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

7. The isolated nucleic acid of claim 1, wherein the nucleic acid is amplified by primers that specifically hybridize under stringent hybridization conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

8. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, wherein the nucleic acid specifically hybridizes under stringent hybridization conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

9. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about

70% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12, wherein the nucleic acid selectively hybridizes under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

10. An isolated G-protein coupled receptor polypeptide, the polypeptide comprising greater than about 70% amino acid sequence identity to an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

11. The isolated polypeptide of claim 10, wherein the polypeptide specifically binds to polyclonal antibodies generated against SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

12. The isolated polypeptide of claim 10, wherein the polypeptide has G-protein coupled receptor activity.

13. The isolated polypeptide of claim 10, wherein the polypeptide has an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, or SEQ ID NO:12.

14. An antibody that selectively binds to the polypeptide of claim 10.

15. An expression vector comprising the nucleic acid of claim 1.

16. A host cell transfected with the vector of claim 15.

17. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the nucleic acid encoding a polypeptide comprising greater than 85% amino acid identity to an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

18. The isolated nucleic acid of claim 17, wherein the nucleic acid encodes a polypeptide having at least 50 contiguous amino acids of an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

19. The isolated nucleic acid of claim 17, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

20. The isolated nucleic acid of claim 17, wherein the nucleic acid encodes a polypeptide that has G-protein coupled receptor activity.

21. The isolated nucleic acid of claim 17, wherein the nucleic acid encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

22. The isolated nucleic acid of claim 17, wherein the nucleic acid comprises a nucleotide sequence of SEQ ID NO:15 or SEQ ID NO:17.

23. The isolated nucleic acid of claim 17, wherein the nucleic acid is amplified by primers that specifically hybridize under stringent hybridization conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:15 or SEQ ID NO:17.

24. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, wherein the nucleic acid specifically hybridizes under stringent hybridization conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:15 or SEQ ID NO:17.

25. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about 85% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18, wherein the nucleic acid selectively hybridizes under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:15 or SEQ ID NO:17.

26. An isolated G-protein coupled receptor polypeptide, the polypeptide comprising greater than about 85% amino acid sequence identity to an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

27. The isolated polypeptide of claim 26, wherein the polypeptide specifically binds to polyclonal antibodies generated against SEQ ID NO:16 or SEQ ID NO:18.

28. The isolated polypeptide of claim 26, wherein the polypeptide has G-protein coupled receptor activity.

29. The isolated polypeptide of claim 26, wherein the polypeptide has an amino acid sequence of SEQ ID NO:16 or SEQ ID NO:18.

30. An antibody that selectively binds to the polypeptide of claim 26.

31. An expression vector comprising the nucleic acid of claim 17.

32. A host cell transfected with the vector of claim 31.

33. A method for identifying a compound that modulates signal transduction, the method comprising the steps of:

(i) contacting the compound with a polypeptide comprising greater than 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16 and SEQ ID NO:18; and

(ii) determining the functional effect of the compound upon the polypeptide.

34. The method of claim 33, wherein the polypeptide has G-protein coupled receptor activity.

35. The method of claim 33, wherein the polypeptide comprises greater than 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:8 or SEQ ID NO:10 or greater than 85% amino acid sequence identity to the amino acid sequence of SEQ ID NO:16 and SEQ ID NO:18.

36. The method of claim 33, wherein the polypeptide is linked to a solid phase.

37. The method of claim 33, wherein the functional effect is determined by measuring changes in intracellular cAMP, IP3, or $Ca^{2+}$.

38. The method of claim 33, wherein the functional effect is determined by measuring binding of the compound to the polypeptide.

39. The method of claim 33, wherein the polypeptide comprises an amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16 and SEQ ID NO:18.

40. The method of claim 33, wherein the polypeptide is expressed in a cell or cell membrane.

41. The method of claim 40, wherein the cell is selected from the group consisting of an adipocyte cell, a spleen cell, a colon cell, a kidney cell, a neuron, a skeletal muscle cell, an ocular cell, a retina cell, a hypothalamus cell, and a tongue cell.

42. A method of identifying a mammal having a TGR-associated disorder, comprising detecting a TGR nucleic acid molecule in a sample from the mammal, wherein said TGR nucleic acid molecule is a nucleic acid comprising greater than 70% nucleic acid sequence identity to the nucleic acid sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:15 and SEQ ID NO:17, and wherein abnormal expression of the TGR nucleic acid molecule in the sample indicates that the mammal has a TGR-associated disorder.

43. The method of claim 42, wherein the TGR nucleic acid molecule comprises greater than 70% nucleic acid sequence identity to the nucleic acid sequence of SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:15 and SEQ ID NO:17.

44. A method of identifying a mammal having a TGR-associated disorder, comprising detecting a TGR polypeptide in a sample from the mammal, wherein the TGR polypeptide comprises greater than 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16 and SEQ ID NO:18, and wherein abnormal expression of the TGR polypeptide in the sample indicates that the mammal has a TGR-associated disorder.

45. The method of claim 44, wherein the TGR polypeptide comprises greater than 70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16 and SEQ ID NO:18.

46. A method of treating or preventing a TGR-associated disorder, comprising administering a therapeutically effective amount of a modulator identified using the method of claim 33 to a mammal in need thereof.

47. A method of treating retinitis pigmentosa, the method comprising the step of administering to a patient a compound that modulates the activity of TGR60.

48. A method of regulating circadian rhythms, the method comprising the step of administering to a patient a compound that modulates the activity of TGR60.